

REMARKS

Claims 1-32 and 34-40 were presented for examination in the present application. The instant amendment cancels claims 2, 11, 18, 21-32, 35-38, and 40 without prejudice and adds new claims 41-42. Thus, claims 1, 3-10, 12-17, 19-20, 34, 39, and 41-42 are pending for consideration upon entry of the instant amendment. Claim 1 is independent.

Claims 2, 11, 18, 21-32, 35-38, and 40 have been cancelled, rendering the rejections to these claims moot. Reconsideration and withdrawal of the rejections to these cancelled claims are respectfully requested.

Independent claim 1, as well as dependent claims 3-7, 9-10, 12-14, 16-17, 19-20, 34, and 39, were rejected under 35 U.S.C. §103 over U.S. Publication No. 2002/0019069 to Wada et al. (Wada) in view of U.S. Patent No. 4,374,391 to Camlibel et al. (Camlibel) and U.S. Patent No. 5,047,369 to Fleming et al (Fleming). Dependent claim 8 was rejected under 35 U.S.C. §103 over Wada, Camlibel, and Fleming in further view of U.S. Patent No. 4,889,960 to Butt (Butt).

Independent claim 1 has been amended to remove various process steps deemed un-necessary for patentability. The amended claims are intended to no longer be limited to the specific mechanisms of patentability previously argued with respect thereto. Applicants therefore rescind any previous disclaimer of claim scope and, thus, any prior art, for which such a disclaimer was made to avoid, may need to be revisited by the Examiner with respect to the amended claims.

Applicants respectfully submit that the proposed combination of cited art fails to disclose or suggest amended claim 1.

Independent claim 1 has been amended to include elements of cancelled claim 22. Claim 22 was previously rejected under 35 U.S.C. §103 over Wada in view of U.S.

Publication No. 20050244949 to Miles (Miles).

Independent claim 1 now recites that the vapor-coating step comprises, in part, the step of “directing the ion beam onto the substrate during the vapor-coating so as to additionally densify the glass layer so that the glass layer has a helium leak rate of less than 10^{-7} mbar l s⁻¹ (emphasis added)”.

The Office Action acknowledges that Wada, as modified by Camlibel, Butt, and Fleming, fails to disclose or suggest plasma ion assisted deposition. See page 13, lines 10-15 of the Office Action dated June 14, 2007. Rather, the Office Action asserts (with respect to cancelled claim 22) that Miles discloses ion assisted e-beam deposition, which controls stress. Id at lines 16-20.

Applicants respectfully traverse this assertion.

Miles discloses that the layers to be deposited are either metals or oxides, but fails to disclose or suggest deposition of a glass layer as claimed. There is no hint in Miles or any of the other cited documents that layer stress in a glass layer is controllable by an ion beam. The materials mentioned in Miles are typically crystalline. In crystalline materials, the density depends on how dense the crystallites are packed. The packing density may well be influenced by an ion beam. However, the claimed glass layers are, by definition, amorphous and, not crystalline. Thus, there would be no reasonable expectation that one could successfully apply the e-beam deposition stress relief of Miles to ion beam vapor deposition of a glass layer as claimed.

Even if one was to assume that the relief of layer stress in the crystalline metals or oxides of Miles were sufficient to relieve the layer stress in amorphous glass layer as claimed (which it is not), Applicants submit that Miles fails to disclose or suggest that the glass layer could be densified in a manner so that the helium leak rate of the glass layer is less than 10^{-7} mbar l s⁻¹ as now recited in claim 1.

In addition, Applicants submit that the proposed modification of Wada, in view of Camlibel, Butt, Fleming, and Miles, fails to disclose or suggest additional elements of amended claim 1.

Independent claim 1 now recites that the vapor-coating step comprises, in part, the steps of "generating vapor by generating an electron beam and impinging the electron beam onto a glass target of the vapor-deposition glass source" and "producing an ion beam by ionizing a gas in a plasma generated by a plasma source".

Support for these amendments can be found in the specification at least on page 2, line 29 to page 3, line 4, as well as on page 4, line 29 to page 5, line 2. No new matter is added.

Miles fails to disclose or suggest that a vapor can be generated from impinging an electron beam a glass target of a vapor-deposition glass source as claimed. As such, Miles fails to disclose or suggest that glass layers are producable by ion assisted beam deposition.

Applicants also submit that there are many ways to generate an ion beam, e.g. by electron bombardment, UV-rays or cathode rays, etc. However, Miles fails to disclose or suggest that the ion beam is produced by ionizing a gas in a plasma as claimed.

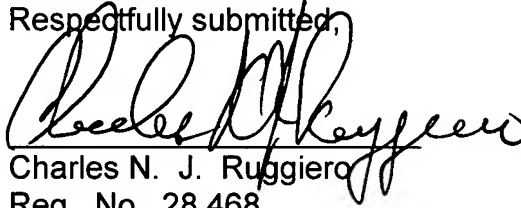
Accordingly, claim 1 is in condition for allowance. Claims 3-10, 12-17, 19-20, 34, 39, and 41-42 are also in condition for allowance for at least the reason that they depend from claim 1. Reconsideration and withdrawal of the rejection to claims 1, 3-10, 12-17, 19-20, 34, 39, and 41-42 are therefore respectfully requested.

In view of the above, it is respectfully submitted that the present application is in condition for allowance. Such action is solicited.

If for any reason the Examiner feels that consultation with Applicants' attorney would be helpful in the advancement of the prosecution, the Examiner is invited to call the telephone number below.

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Respectfully submitted,



Charles N. J. Ruggiero

Reg. No. 28,468

Attorney for Applicant(s)

Ohlandt, Greeley, Ruggiero & Perle, L.L.P.

One Landmark Square, 10th floor

Stamford, CT 06901-2682

Tel: (203) 327-4500

Fax: (203) 327-6401